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Basic Skills
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Program

February 1988

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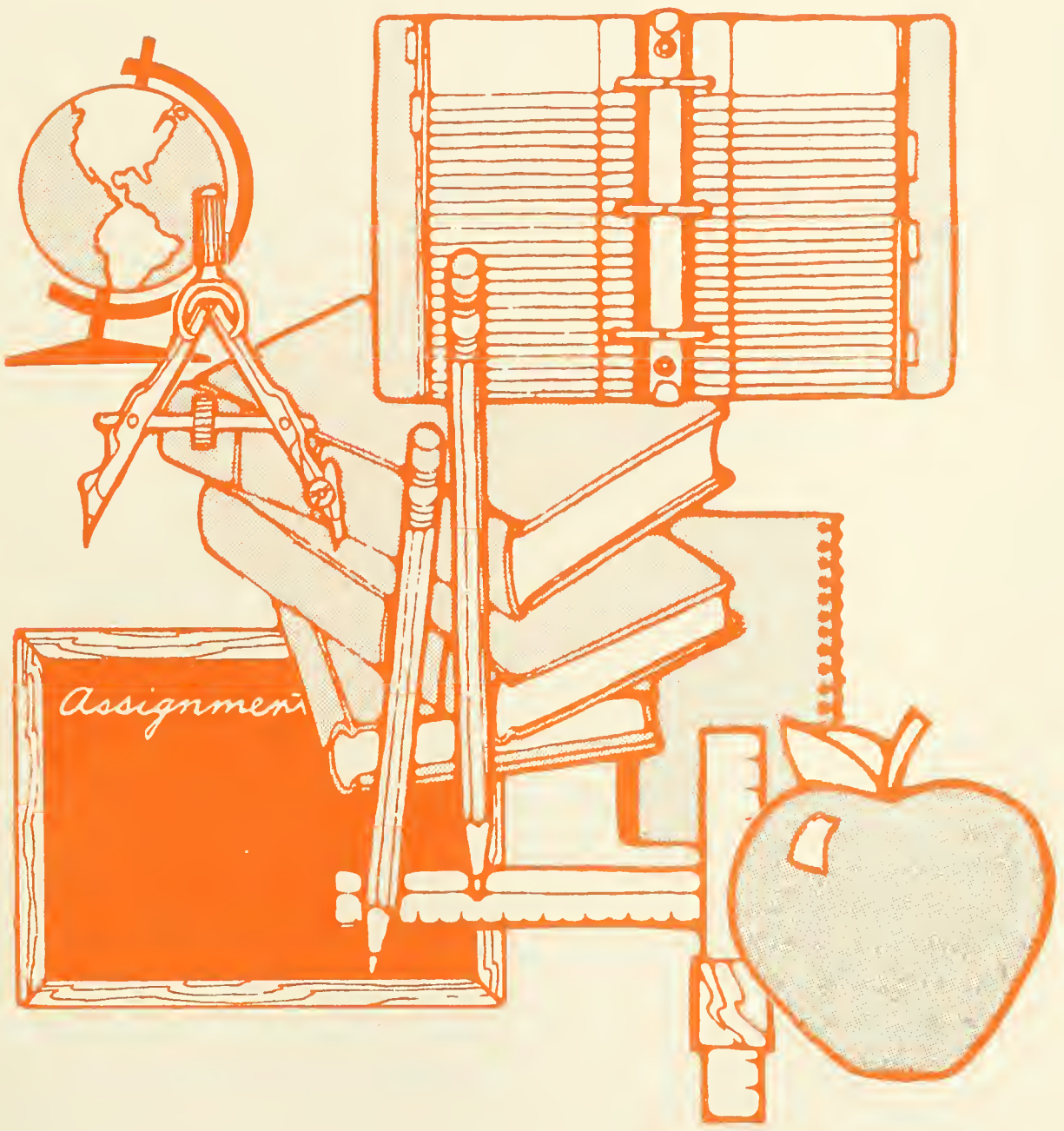
MASSACHUSETTS BASIC SKILLS TESTS:
1987 RESULTS



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MASSACHUSETTS BASIC SKILLS TESTS:

1987 RESULTS

February 1988

MASSACHUSETTS DEPARTMENT OF EDUCATION

EXECUTIVE SUMMARY

The 1987 report of the second year of the Basic Skills Testing Program, authorized under Chapter 188, summarizes the test performance of all third, sixth and ninth grade students tested in reading, mathematics and writing. The purpose of Basic Skills Testing is to identify students who have not mastered basic skills. The second year of the program implemented the uniform statewide standard established by the Board of Education.

A total of about 160,000 elementary and secondary students, representing 93% of the total enrollments at grades 3, 6 and 9, were eligible for testing during October 1987. The percentages of students who met or exceeded the standard of 65% correct in reading and mathematics and the required levels of proficiency in writing are summarized below.

	READING	MATHEMATICS	WRITING
Grade 3	93%	93%	91%
Grade 6	86%	91%	89%
Grade 9	84%	86%	87%

The vast majority of students at all grade levels demonstrated mastery of basic skills on all three tests. At third grade, 85% of the students passed all the tests; at sixth grade, the figure was 79%; and at the ninth grade, 76%. On the other hand, there are certain categories of students who could be considered "at risk." These include:

- 30,000 students who failed at least one of the tests and, of these, 15,000 who failed two or more tests;

- slightly more than 2300 students statewide who were eligible for the tests but did not take them. In many instances, these students could be overlooked because of lack of information on their mastery of basic skills. Many of them were enrolled in urban areas.

Among the failing students there was over-representation, as noted in previous basic skills reports, of urban and minority students as well as of students whose parents did not complete high school. The relationships among factors such as parent background, race/ethnicity, and place of residence, however, are not simple and direct.

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CHAPTER 1: INTRODUCTION

Background

The Massachusetts Testing Program, mandated by Chapter 188 of the Acts of 1985, has two components. The Massachusetts Educational Assessment Program is designed to improve curriculum and instruction in the public schools. The Basic Skills Testing Program, in contrast, aims to identify students who have not achieved mastery of the basic skills of reading, writing and mathematics.

The Basic Skills Testing Program replaces the testing required under the former Basic Skills Improvement Policy with uniform statewide tests and standards for grades 3, 6 and 9. The 1986-87 school year was the first year of implementation of the new program; the reporting of results for that test administration did not include a statewide standard. Based on the first year's results, the Massachusetts Board of Education established statewide standards in reading, mathematics and writing that have been applied to this year's results.

Purpose

The purpose of the Basic Skills Testing Program is "to identify students who have not achieved mastery of basic skills," defined as the skills in reading, mathematics and writing that allow students to participate successfully in their regular grade class work. To fulfill this purpose efficiently and reliably, the Basic Skills test questions discriminate between students who have mastered basic skills and those who have not. The tests are not intended to distinguish more finely among levels of basic skills mastery.

Basic Skills testing is not intended to replace more comprehensive district-wide programs providing diagnostic information on student needs or curriculum information about the schools. The responsibility for diagnosis of individual or curriculum weaknesses and remediation remains with the individual school districts.

The design of the Basic Skills Program calls for virtually all students in the appropriate grades to be tested. Exemptions are limited to

- students who are incapable of performing ordinary classwork in English as determined by the English Language Proficiency Assessment and who have been enrolled in transitional bilingual education programs for fewer than three full years, unless a written request was submitted by the parent that the student be tested.

- special education students if exemptions were requested by the parent either in writing or as part of the TEAM process.

Test Development

Advanced Systems in Measurement and Evaluation, Inc. of Dover, New Hampshire is the contractor responsible for the development and administration

of the 1986 and 1987 tests. Input from Massachusetts educators was incorporated into the test development process at many stages so that the tests would be as congruent as possible with current practice in Massachusetts schools.

Standard

The Massachusetts Board of Education established a standard of 65% correct in reading and mathematics at all grade levels and identified required levels of proficiency in writing. (The papers illustrating the standard in writing for each grade level are provided in Appendix I.) In selecting appropriate standards, the Board received input from a number of standard setting committees representing a wide range of educators and non-educators. In addition, the Board considered data on student performance and teacher judgments of basic skills mastery collected during the first administration of the tests.

Chapter 188 allows local school districts to set higher standards than those established by the Board. If districts wished to have a higher standard incorporated into their school and district reports, they reported their standards to the Department of Education. For the 1987 test administration, the following number of districts selected higher standards as shown:

STANDARD	NUMBER OF DISTRICTS
70%	16
75%	4
80%	6

Use Of Test Results

Because of the purpose and design of the Basic Skills Testing Program, interpretation of the results may differ depending on the extent of the basic skills problems. Most school districts in Massachusetts have a large percentage of students who pass all the Basic Skills Tests and a very small number of students who do not. In these school districts, the most appropriate response to the results occurs on a case-by-case basis. Non-passing students are evaluated individually and appropriate modifications in their programs made if necessary.

Some schools and districts have a more extensive problem with their students' basic skills mastery. These districts have a relatively small percentage of students passing the tests and substantially larger numbers of students who fail. In some of these situations, it may be appropriate to consider programmatic rather than individual responses to Basic Skills results.

Other factors affecting the interpretation of Basic Skills information are the grade levels tested and the time of testing in October of each school year. In some instances, students had been enrolled in a school for no more than a month at the time they were tested. At least for these schools, attempting to relate test results to an evaluation of the school's program would be inappropriate.

For example, vocational schools' results are based on testing students who had been previously enrolled in a number of feeder schools and had typically no more than two weeks of academic instruction at the vocational school. For these schools, the results define the extent of the basic skills problem the school needs to deal with. Any evaluation of the school's program based on these results would be incorrect.

The Basic Skills Testing Program helps to establish a level of achievement that all students in the educational system should attain. It represents an attempt to insure that no students will fall below this minimum level of achievement in reading, writing and mathematics. The most legitimate use of test results supports this effort to help students.

CHAPTER 2: 1987 RESULTS

This section contains the statewide results of the 1987 Basic Skills tests. Comparable statistics are provided for grades 3, 6 and 9. Two different types of statistics are included; each type offers one perspective on students' performance. Both are useful for an improved understanding of Basic Skills results.

The first set of statistics describes the performance of eligible students on each test. Since Chapter 188 states that "the board shall annually test all students" at the particular grade levels, the reporting categories account for all students that schools and districts report as enrolled. A student may be in one of four categories:

- Exempt - an enrolled student who was exempted from the test in accordance with program criteria.

Of the students eligible to be tested, results may show:

- Pass - an enrolled student who scored above the statewide standard;
- Fail - an enrolled student who scored below the statewide standard; or
- Unknown - an enrolled student who did not take the test or whose test was unscorable.

At each grade level, the results show the distribution of students in each category for each subject tested. These statistics are useful in addressing questions such as "How many sixth grade students have demonstrated mastery of each of the basic skills?"

This type of information, however, does not provide a total picture of Basic Skills performance. For example, if each test has a 10% failure rate, one could ask whether:

- the same 10% of students failed all three tests;
- the 10% failure rate in each subject represents completely different students; or
- the true situation lies somewhere between these extremes.

The second group of statistics--the number of tests passed--helps to clarify this issue, answering questions such as, "How many sixth grade students have demonstrated mastery of <u>all</u> of the basic skills?"

GRADE 3

BASIC SKILLS TESTS RESULTS
1987

READING

Number of Students	
Total Enrollment	59,405
Total Exemptions	4,271
Special Education	2,482
Bilingual	1,789
Eligible to be tested	55,134

Students Eligible to be Tested		
	Number	**Percentage**
Pass	51,356	93.1%
Fail	3,575	6.5%
Unknown	203	.4%

MATHEMATICS

Number of Students	
Total Enrollment	59,405
Total Exemptions	4,126
Special Education	2,343
Bilingual	1,783
Eligible to be tested	55,279

Students Eligible to be Tested		
	Number	**Percentage**
Pass	51,592	93.3%
Fail	3,471	6.2%
Unknown	266	.5%

WRITING

Number of Students	
Total Enrollment	59,405
Total Exemptions	4,327
Special Education	2,527
Bilingual	1,800
Eligible to be tested	55,078

Students Eligible to be Tested		
	Number	**Percentage**
Pass	50,302	91.4%
Fail	4,131	7.5%
Unknown	645	1.2%
Blank	38	.1%
Too Brief	82	.1%
Off Topic	136	.2%

Passed Tests		
	Number	**Percentage**
Passed all 3 tests	46,888	85.3%
Passed 2 tests	5,139	9.3%
Passed 1 test	1,854	3.4%
Passed 0 tests	1,110	2.0%

- The number of exemptions represents 7.2% of the total enrollment. This figure is up 1.4% from last year's 5.8% due to an increased number of special education exemptions.

- Failure rates in reading and mathematics are lower than predicted by 1986 results. Appendix II discusses some possible explanations for this difference.

- Failure rates on the grade 3 tests ranged from 6% to 8%; 15% of the students failed at least one test.

- 98.8% of the third graders produced an essay that could be evaluated; fewer than 220 students' writing samples were found to be too brief to evaluate or were judged to be off topic.

GRADE 6

BASIC SKILLS TESTS RESULTS
1987

READING

Number of Students	
Total Enrollment	56,220
Total Exemptions	3,555
Special Education	2,524
Bilingual	1,031
Eligible to be tested	52,665

Students Eligible to be Tested		
	Number	**Percentage**
Pass	45,416	86.2%
Fail	6,806	12.9%
Unknown	443	.8%

MATHEMATICS

Number of Students	
Total Enrollment	56,220
Total Exemptions	3,474
Special Education	2,450
Bilingual	1,024
Eligible to be tested	52,746

Students Eligible to be Tested		
	Number	**Percentage**
Pass	47,908	90.8%
Fail	4,326	8.2%
Unknown	512	1.0%

WRITING

Number of Students	
Total Enrollment	56,220
Total Exemptions	3,624
Special Education	2,595
Bilingual	1,029
Eligible to be tested	52,596

Students Eligible to be Tested		
	Number	Percentage
Pass	46,880	89.1%
Fail	4,899	9.3%
Unknown	817	1.6%
Blank	252	.5%
Too Brief	79	.2%
Off Topic	96	.2%
No Final Draft	26	.1%

Passed Tests		
	Number	Percentage
Passed all 3 tests	41,483	79.1%
Passed 2 tests	6,206	11.8%
Passed 1 test	2,995	5.7%
Passed 0 tests	1,796	3.4%

- The number of exemptions represents 6.3% of the total enrollment. This figure is up 1.5% from last year's 4.8% due to increases in the number of both special education and bilingual exemptions.

- Failure rates in reading and mathematics are similar to those predicted by 1986 results. Appendix II discusses issues related to comparisons between 1986 and 1987 data.

- Failure rates on the grade 6 tests ranged from 8% to 13%; 21% of the students failed at least one test.

- 98% of the sixth grade students produced an essay that could be evaluated. A majority of the unscorable essays were blank papers.

GRADE 9

BASIC SKILLS TESTS RESULTS
1987

READING

Number of Students	
Total Enrollment	63,573
Total Exemptions	4,027
Special Education	2,593
Bilingual	1,434
Eligible to be tested	59,546

Students Eligible to be Tested		
	Number	**Percentage**
Pass	49,897	83.8%
Fail	7,494	12.6%
Unknown	2,155	3.6%

MATHEMATICS

Number of Students	
Total Enrollment	63,573
Total Exemptions	3,983
Special Education	2,551
Bilingual	1,432
Eligible to be tested	59,590

Students Eligible to be Tested		
	Number	**Percentage**
Pass	51,178	85.9%
Fail	6,000	10.1%
Unknown	2,412	4.0%

WRITING

Number of Students	
Total Enrollment	63,573
Total Exemptions	4,030
Special Education	2,596
Bilingual	1,434
Eligible to be tested	59,543

Students Eligible to be Tested		
	Number	**Percentage**
Pass	52,029	87.4%
Fail	4,373	7.3%
Unknown	3,141	5.3%
Blank	793	1.3%
Too Brief	169	.3%
Off Topic	196	.3%
No Final Draft	35	.1%

Passed Tests		
	Number	**Percentage**
Passed all 3 tests	45,318	76.3%
Passed 2 tests	6,534	11.0%
Passed 1 test	3,786	6.4%
Passed 0 tests	3,751	6.3%

- The number of exemptions increased slightly over 1986, representing about 6.4% of the total enrollment. The percentage of special education exemptions increased somewhat and the percentage of bilingual exemptions decreased slightly.

- The number of students who were eligible but did not take any of the tests decreased by about .7%.

- Failure rates in reading and mathematics were similar to those predicted by the 1986 results: Appendix II discusses issues related to comparisons between 1986 and 1987 results.

- Failure rates on the grade 9 tests ranged from 7% to 13%; almost 24% of the students failed at least one test.

- 95% of the ninth grade students produced an essay that could be evaluated. Blank papers accounted for two thirds of the unscorable papers.

CHAPTER 3: DISCUSSION

The identification of students at risk of failure is an important priority for every school, whether the school has only one such student or a majority. Examination of the statewide Basic Skills data yields at least three categories of students likely to be at risk based on their performance on the Basic Skills Tests.

The first group of students potentially at risk are those who are in the "unknown" category for all three tests. These students were reported to be enrolled, were not exempted and, therefore, were eligible to be tested but did not take any of the tests during the three-week testing period. Some may have had legitimate reasons for their non-participation and present no cause for concern. One way of describing the Basic Skills Program, however, is that it represents a "safety net" policy that tries to catch students who might otherwise "slip through the cracks." In this context, students who were unavailable for testing, without legitimate reasons known to the school, could well be most at risk.

Since these students did not complete any test materials, no data exists to identify factors that may be related to not taking any test. The data do show, however, that the number of "unknown" students increases across the grade levels: 150 (.3%) at grade 3, about 350 (.6%) at grade 6 and just over 1800 (3.0%) at grade 9. In addition, the students are not equally distributed across school districts. Well over 70% of the unknown students were enrolled in urban districts.

A second category of students at great risk of failure are those students who took and failed all three Basic Skills Tests. A small percentage of students are in this group--about 4% across all three grade levels with a slightly lower percentage at grade 3 and slightly higher at grade 9.

Although these students have arguably the most serious basic skills problems, about 40% of them were reported to be special needs students. This designation suggests prior identification of a particular educational need and the existence of an individual education plan for these students.

A third approach to defining at-risk students includes all students who failed at least one test. While a small percentage of students failed all three tests, 20%--or one in every five students across the state--failed at least one test. This group of just over 30,000 students is in some ways demographically similar to those students who passed all tests. For example, at grades 6 and 9, most of them have been U.S. residents all their lives, are fluent English speakers and speak only English at home. A majority are white. Among those who reported their parents' education, most responded that their parents were at least high school graduates. A majority of these students are not enrolled in special education programs.

Some groups of students are overrepresented, thus identifying factors related to student performance. In particular, parent education and home language were found to be related to performance on the tests. At grade 6,

about 11% of the students who did not pass one or more tests reported their parents did not complete high school. For students who passed all tests, the corresponding percentage was 6%. Similarly, students who speak a language other than English more than half the time were disproportionately represented in the non-passing group.

Relationships between these factors and performance are not simple and direct. Combinations of factors may change the relationship indicated when the factors are considered separately. For example, grade 6 Asian students have passing percentages in reading similar to those of white students. Asian students in cities, however, have passing rates closer to those of black and other minority students. Asian students not in cities have the highest reading passing rates among all race/ethnicity categories.

Overall, the results for 1987 continue a pattern that was evident in the results for the 1986 test administration and over the five years of testing under the prior Basic Skills Improvement Policy. Mastery of basic skills remains a problem for identifiable segments of the student population. Schools that enroll larger numbers of these students can expect to serve a larger number of students at risk of failure.

APPENDIX I: PAPERS ILLUSTRATING THE

BASIC SKILLS STANDARD IN WRITING

GRADE 3

We all have a favorite place where we like to go. Some people have a special place in their home. Others have a place at school, in their neighborhood, or somewhere else.

Think about some of the things you like to do in your favorite place. Tell as much as you can about your favorite place on the lines below.

I Like to use my scoter down sollar and play with My freinds to. I Like to play handant house down sollar. I Like to watch TV to down Sollar - and. I Like to play with my father.

GRADE 6

Think of your favorite entertainer or musical group. Write a composition in which you state who this entertainer or group is, and describe the person or group. Be sure to include enough detail so that someone who has never seen them will know what this person or group is like and will understand why they are your favorite.

Michael Jackson is my favourite entertainer. He is famous though out the world. A lot of the money that he makes goes to the poor. He put his songs on records, and tapes. Michael is also a very famous actor. He is also famous for his jacket it is red or black with a lot of zippers.

GRADE 9

Your school has just received a grant of $2,000 to improve your school. Your principal has decided to let the students determine how the money will be spent. The principal will spend the money on the idea that is suggested by the most persuasive letter.

Your assignment is to write a letter to your principal in which you state your idea on how the $2,000 should be spent, and present arguments as to why your idea should be the one chosen. Your teacher will show you the right way to start your letter, so do not worry about remembering the correct form for a letter.

October 21, 1986

Dear principal:

My idea on what the 2,000 should be spent is fixing up the school a little painting the school fixing up the restroom (Bathrooms) and keep area clean and safe for students. why this idea was chosen was because every where you look something is broken or messed up. we deserve to study in a very decent place.

Sincerely

APPENDIX II: 1986 AND 1987 RESULTS

The first administration of the Basic Skills tests in 1986 incorporated several unique design characteristics. Because the Board of Education did not establish a standard for the first administration of the tests, the 1986 tests were not as tightly targeted around a particular standard as subsequent tests would be. They included field test items for future tests.

The plan for test development called for new tests to be created for 1987 targeted to the standard established by the Board of Education and based on performance data from the 1986 administration. The items for the 1987 tests were field tested either during the 1986 test administration or during the spring of 1987. The spring field testing was conducted in grades 2, 5 and 8.

The Massachusetts Board of Education established a standard for the tests by identifying the level of difficulty for the tests and setting 65% correct as the numerical standard for the reading and mathematics tests. Using 1986 performance data to predict 1987 results on the new tests with these standards, it was estimated that approximately 12.5% of the students would fail each test.

The critical assumption in this process was that 1986 performance would be similar to 1987 performance. If that assumption did not hold and 1987 students performed either better or worse on test items than their 1986 counterparts, the failure rate would be higher or lower than predicted.

The 1987 results show that a 12.5% failure rate does not occur in all instances. Several things may be true:

- the nature of the tested population may be different;
- students' mastery of basic skills may be better;
- the test administration conditions may have been different;
- some element of the test design or construction may have affected performance; or
- some combination of the above.

An examination of the possible explanations suggests that the last situation--some combination of all possibilities--is most likely true.

A more detailed discussion of this analysis will appear in a later technical report. A number of examples will help to explain some of the difficulties in making direct comparisons between the 1986 and 1987 results.

1. Nature of the tested population: In 1987, a higher percentage of special needs and bilingual students was exempted from testing in some instances. Therefore, the tested population is different in at least this aspect. Since students in these two categories tend to have lower performance rates on these tests, the exclusion of a higher percentage of these students would likely affect the overall results.

2. Test construction: Decisions about which items to include in a test are largely based on field test data. The goal is to make field testing as similar as possible to the test administration so that field test results will be as close as possible to performance during the actual test administration. Many factors affect the comparability of field test data to actual performance data.

A comparison between field test and 1987 data for the Basic Skills Tests indicates some differences between the two. Several possible explanations exist for some of these differences:

- differences between the October and spring field testing. The October field test results seem to be a better match with 1987 data.

- changes in the position of the item in the test. In some instances, students performed differently from field testing predictions on items that were moved to other positions in the test.

- context of the item. Some items that appeared in a different position in field tests seem to be affected by the change in items that came before and after.

3. Conditions of test administration: Since tests were administered in over 2,000 classrooms, it is impossible to know exactly the conditions of the test administration. It is likely that, since a single standard would be applied to the 1987 tests, more careful administration occurred in 1987 than in 1986. For example, some data suggest that more third grade students took the test in two shorter sessions, rather than a single longer session, which could have affected performance.

None of these factors seems to have affected the relationship between 1986 and 1987 results in a systematic way. Obviously the relationship is complex and many other factors, perhaps unique to a grade level or a subject area, are likely involved.

The important conclusion to draw from this analysis is that direct comparisons between 1986 and 1987 test results should not be made. In some instances, students performed better than predicted by last year's results, and in other cases, not as well. Further, some results match very well with the predicted performance. A number of factors have been identified as possible explanations for these differences, but no one has emerged as the single, most important factor.

APPENDIX III: CONTENT COMMITTEES

MASSACHUSETTS BASIC SKILLS TESTING PROGRAM

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Gwendolyn Blackburn	Supervisor	Medford
Tony Furtado	Career Counselor	Fall River
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Brenda Jochums	Associate Professor	Lowell
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Velma Cobb-Stubbs	Education Specialist	Department of Education
Harriet Schecter	Education Specialist	Department of Education
Jane Sherman	Education Specialist	Department of Education
Nan Stein	Education Specialist	Department of Education

Writing Committee

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Marna Bunce	Elementary Teacher	Pelham
Joyce Campbell	English Dept. Chair	Boston
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Marjorie Condon	Assistant, Office of Instruction	Fall River
Karen Conklin	Director of Curriculum and Instruction	Lenox
Nadine Henderson	English Dept. Head	Northborough
Patricia Hunter	English Teacher	Springfield
Jane Leone	Language Arts Resource Advisor	Wilbraham
Jean Lifford	English Dept. Head	Dedham
Paul Naso	Curriculum Specialist Language Arts/Reading	Acton
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Daniel Berthiaume	Math Teacher	Fall River
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Richard Dube	Mathematics Specialist	Taunton
Joan Goddeau	Elementary Math and Chapter 1 Math	Pittsfield
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Beverly Peterson	Teacher	Hingham
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Sharlene Silverman	Math Teacher/Coordinator	Springfield
June Stringer	Math/Science Dept. Head	New Bedford
Claire Zalewski	Elementary Math Specialist	Lexington

Reading Committee

Rose M. Barker	Reading Consultant 7-12	Worcester
Eileen Clifford	Elementary Reading Consultant	Worcester
Mary Brown Daniels	Director of Instruction	Boston
Mary M. Fischer	Reading Specialist	Arlington
Dennis Heaton	8th Grade Reading Teacher	Fall River
Gail E. McGrail	Grade 3 Teacher	South Grafton
Marie McKenzie	Director of Reading	Waltham
Marie Melican	Reading Specialist	Medford
Edith Morgan	Teacher, Chapter 1 Director	Barre
Cynthia O'Connell	Teacher/Reading Specialist	Dedham
Hazelle Pitters	Educational Specialist Curriculum Design	Boston
Paula Sable	Curriculum Assistant	Amesbury
Rosemary Scavongelli	Reading Teacher	Medford
Phyllis Allen Smith	Chair, Basic Skills Program Administrator Reading/Language Arts	Marblehead
Susan M. Smith	Elementary Teacher	Fall River
Martha V. Strachan	Elementary Teacher	Worcester

MASSACHUSETTS DEPARTMENT OF EDUCATION

REGIONAL CENTERS

Micki Siegel
Northwest Regional Center
Mark Hopkins Hall
Church Street
North Adams, MA 01247
413/664-4511

Paul Burnim
Greater Springfield Regional Center
Macek Drive
Chicopee, MA 01013
413/594-8511

Dorothy Earle
Northeast Regional Center
219 North Street
North Reading, MA 01864
617/664-5723

Laurie Slobody
Central Mass. Regional Center
Beaman Street, Route 140
West Boylston, MA 01853
617/835-6266

Peter Cirioni
Greater Boston Regional Center
75 Acton Street
Arlington, MA 02174
617/641-4870

Pat O'Brien
Southeast Regional Center
P.O. Box 29
Middleboro, MA 02346
617/947-1231

Advanced Systems IN MEASUREMENT & EVALUATION, INC.
MOSES PAUL HOUSE • 114 LOCUST STREET, DOVER, NEW HAMPSHIRE 03820

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100 CAMBRIDGE STREET
CHARLESTOWN, MA 02129